



Entergy Nuclear Operations, Inc.
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Anthony J. Vitale
Site Vice President

PNP 2015-085

November 10, 2015

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Automatic Reactor Trip Results from a Turbine Trip Initiated from the
Digital Electro-Hydraulic Control System

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Dear Sir or Madam:

Licensee Event Report (LER) 2015-001-00 is enclosed. This LER describes an event that is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) due to the automatic actuation of the reactor protection system and the auxiliary feedwater system.

This letter contains no new commitments and no revisions to existing commitments.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony J. Vitale", written in a cursive style.

ajv/tad

Attachment: LER 2015-001-00, Automatic Reactor Trip Results from a Turbine Trip
Initiated from the Digital Electro-Hydraulic Control System


CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

ATTACHMENT

LER 2015-001-00

**AUTOMATIC REACTOR TRIP RESULTS FROM A TURBINE TRIP INITIATED FROM
THE DIGITAL ELECTRO-HYDRAULIC CONTROL SYSTEM**

2 Pages Follow

NRC FORM 366 (02-2014)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104		EXPIRES: 01/31/2017					
		LICENSEE EVENT REPORT (LER) (See Page 2 for required number of digits/characters for each block)										
1. FACILITY NAME PALISADES NUCLEAR PLANT					2. DOCKET NUMBER 05000255		3. PAGE 1 OF 2					
4. TITLE Automatic Reactor Trip Results from a Turbine Trip Initiated from the Digital Electro-Hydraulic Control System												
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED			
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER		
09	16	2015	2015	- 001	- 00	11	10	2015	FACILITY NAME	DOCKET NUMBER 05000		
9. OPERATING MODE										11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)		
1			<input type="checkbox"/> 20.2201(b)			<input type="checkbox"/> 20.2203(a)(3)(i)			<input type="checkbox"/> 50.73(a)(2)(i)(C)		<input type="checkbox"/> 50.73(a)(2)(vii)	
			<input type="checkbox"/> 20.2201(d)			<input type="checkbox"/> 20.2203(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(ii)(A)		<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
			<input type="checkbox"/> 20.2203(a)(1)			<input type="checkbox"/> 20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(ii)(B)		<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
			<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/> 50.73(a)(2)(ix)(A)	
10. POWER LEVEL 085			<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)		<input type="checkbox"/> 50.73(a)(2)(x)	
			<input type="checkbox"/> 20.2203(a)(2)(iii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(v)(A)		<input type="checkbox"/> 73.71(a)(4)	
			<input type="checkbox"/> 20.2203(a)(2)(iv)			<input type="checkbox"/> 50.46(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(v)(B)		<input type="checkbox"/> 73.71(a)(5)	
			<input type="checkbox"/> 20.2203(a)(2)(v)			<input type="checkbox"/> 50.73(a)(2)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> OTHER	
			<input type="checkbox"/> 20.2203(a)(2)(vi)			<input type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(v)(D)		Specify in Abstract below or in NRC Form 366A	
12. LICENSEE CONTACT FOR THIS LER												
LICENSEE CONTACT Jeff Hardy, Regulatory Assurance Manager								TELEPHONE NUMBER (Include Area Code) 269-764-2011				
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT												
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX			
B	JJ	JX	W120	Y								
14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)						<input checked="" type="checkbox"/> NO						
						15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR		

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On September 16, 2015, at approximately 0117 hours, an anomaly within the digital electro-hydraulic (DEH) turbine control system initiated a turbine trip. As designed, the turbine trip actuated the reactor protection system to automatically trip the reactor due to a loss of load and the auxiliary feedwater system started automatically to recover steam generator levels.

The direct cause of the event is the turbine tripped due to actuation of the "DEH controller loss of power" turbine trip logic. Troubleshooting and analysis determined there was a failure of a power supply module on a circuit board in the DEH turbine control system. Subsequent to the power failure on the circuit board, a second failure, either a loss of power to the overspeed protection control (OPC) distributed processing units (DPUs) or a loss of communications between the primary and backup OPC DPUs, occurred resulting in an actuation of the "DEH controller loss of power" turbine trip logic.

The root cause of the event is that the design of the DEH system contains unnecessary trip logic associated with turbine overspeed monitoring. Corrective actions include a modification to remove the DEH system OPC loss of power and loss of communications trip logic.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
PALISADES NUCLEAR PLANT	05000255	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 2
		2015	- 001	- 00	

NARRATIVE**EVENT DESCRIPTION**

On September 16, 2015, the plant was operating at approximately 85% power performing a coastdown in preparation for refueling outage 1R24. At approximately 0117 hours, an anomaly within the digital electro-hydraulic (DEH) turbine control system [JJ] initiated a turbine [TRB] trip. As designed, the turbine trip actuated the reactor protection system [JC] to automatically trip the reactor [RCT] due to a loss of load. The auxiliary feedwater system [BA] started automatically, as designed, to recover steam generator [SG] levels.

No safety-related structures, components, or systems were inoperable at the start of the event that contributed to the event.

The Palisades DEH control system is based on the Westinghouse Distributed Processing Family (WDPF) MOD III that was installed in 1992.

CAUSE OF THE EVENT

The direct cause of the event is the turbine tripped due to actuation of the "DEH controller loss of power" turbine trip logic. The cause for the turbine trip logic actuation was two-fold. Initially, there was a failure of a power supply [JX] module on a circuit board in the DEH turbine control system. Subsequent to the power failure on the circuit board, a second failure, either a loss of power to the overspeed protection control (OPC) distributed processing units (DPUs) or a loss of communications between the primary and backup OPC DPUs, occurred resulting in an actuation of the "DEH controller loss of power" turbine trip logic.

The root cause of the event is that the design of the DEH system contains unnecessary trip logic associated with turbine overspeed monitoring.

CORRECTIVE ACTIONS

The failed circuit board was replaced. A modification was implemented that removed the DEH system's trip logic for OPC loss of power and loss of communications.

ASSESSMENT OF SAFETY CONSEQUENCES

There were no actual consequences to general safety of the public, nuclear safety, industrial safety, or radiological safety for this event. The automatic reactor trip occurred as designed as a result of the turbine trip. The potential consequences of this event are considered to be of very low safety significance.

PREVIOUS SIMILAR EVENTS

None